Geophysical Research Abstracts
Vol. 15, EGU2013-8499, 2013
EGU General Assembly 2013


# First results of a Pn-tomography study from an active on- and offshore seismic experiment at the Walvis Ridge in northern Namibia

Benjamin Braeuer (1), Trond Ryberg (1), Karen Wittig (1), Christian Haberland (1), Wilfried Jokat (2), Jan Behrmann (3), Michael Weber (1,4)

(1) GeoForschungsZentrum Potsdam, 2.2, Potsdam, Germany (ben@gfz-potsdam.de), (2) Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany, (3) Geomar - Helmholtz Centre for Ocean Research Kiel, Kiel, Germany, (4) Institute of Earth and Environmental Science, Karl-Liebknecht-Str. 24-25, 14476 Potsdam, University of Potsdam, Germany

Passive continental margins offer the unique opportunity to study the processes involved in continental extension and break up. Within the LISPWAL project (part of the SAMPLE SPP), in 2011 combined on- and offshore seismic experiments designed to characterize the Southern African passive margin at the Walvis Ridge in northern Namibia were conducted. In addition to extensive analysis of the crustal structures, the velocity structure of the upper mantle was a subject of this survey. 200 land stations were recording Pn arrivals from five offshore airgun lines. Due to high data quality we were able to identify about 370000 Pn travel times with source-receiver distances between 160 and 470 km used for a Pn-tomography. Various synthetic tests were conducted to evaluate the dependence of the mantle velocity model from the delay times through the crust and to determine the resolving capability. The resulting velocity model for the mantle is showing coast parallel stripes of lower and higher mantle velocities. Clear structures related to the Walvis Ridge and the onshore high velocity body below it in the continental crust were not observed.